

ABSTRACT

A composition and method for treating a set gypsum-containing material are disclosed. The composition is formed from at least water at least one trimetaphosphate salt, at least one monobasic phosphate salt, and at least one acyclic polyphosphate salt having at least three phosphate units. The method comprises applying to a set gypsum material at least two of the following inorganic phosphates: at least one monobasic phosphate salt, at least one trimetaphosphate salt, and at least one acyclic polyphosphate salt having at least three phosphate units. The method can be for inhibiting re-calcination of a set gypsum containing material, and/or for enhancing the strength, surface hardness, paintability, abrasion resistance, and/or water erosion resistance of a set gypsum-containing material. Also disclosed is a method of making a set gypsum-containing material.

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